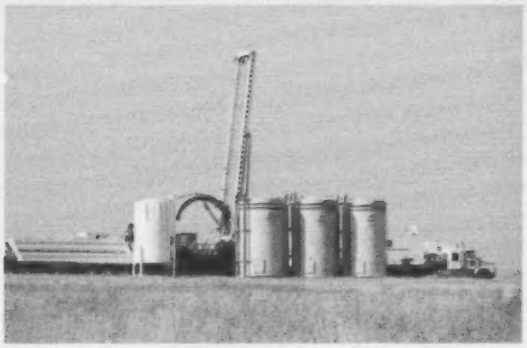
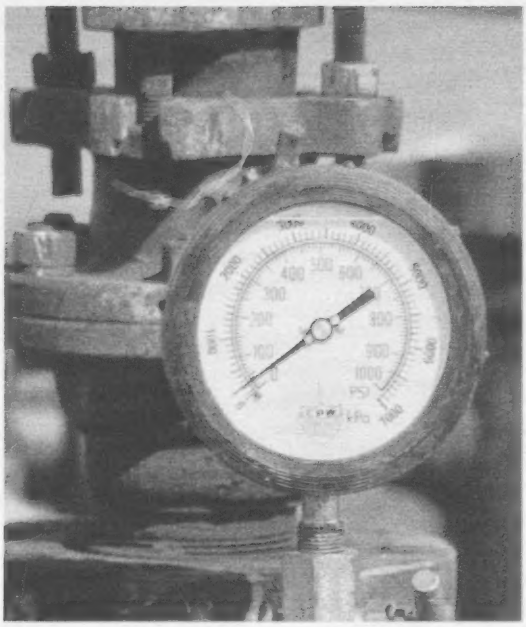


ALBERTA OIL & GAS INDUSTRY QUARTERLY UPDATE



SPRING 2015

Reporting on the period: Dec. 5, 2014, to March 20, 2015

All about oil and gas

While Alberta and its petroleum sector has endured the hurt of sinking world crude oil prices and continued weak natural gas prices, the province is well positioned to rebound once the cyclical nature of commodity prices eventually recalibrates.

In fact, technological advancement has set the stage for another boom in Alberta's non-oil sands oil and natural gas industry. Until the turn of the last decade, the sun had slowly been setting on Alberta's conventional oil and natural gas industry. Oil production had declined from a peak of 1.43 million bbls/d in 1973 to a low of around 460,000 bbls/d in 2010.

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But things have changed for the better, as increased implementation of long horizontal wells and multistage fracturing in tight oil plays across the province—not to mention improved provincial royalty incentives to encourage drilling—has crude oil drilling activity and production on the upswing.

In fact, the tight oil revolution that began in the U.S. gradually moved north into Alberta, marking the dawning of a new day for oil and natural gas exploration and production in the province.

In Alberta, the technology is being used in an increasing number of oil plays. Among the most advanced plays are the Cardium in west-central Alberta, the Beaverhill Lake Carbonates near Swan Hills and the Viking in east-central Alberta.

More importantly, emerging liquids-rich plays like the Montney and Duvernay shale show great promise. In fact, the Duvernay play may have the most potential going forward.

At the end of 2014, industry giants such as Chevron Canada and Encana reported strong liquids yields, particularly for valuable condensate, and producers are preparing to ramp up activity this year.

The Duvernay is often compared to the prolific Eagle Ford of Texas because they are both shale plays that offer a full spectrum, from dry gas through liquids-rich gas to oil. Many other shale plays, such as the Horn River Basin in B.C. and the Marcellus or Barnett south of the border, are much more gas-focused.

In terms of the potential size of the play area, the richness of the source rock and even some of the early production results, the Duvernay "is well on its way to being as big or bigger than the Eagle Ford," Canadian Discovery has proclaimed.

The increase in horizontal drilling activity is expected to offset the steep decline in Alberta conventional production that would otherwise be expected.

The Alberta Energy Regulator estimates the remaining total established reserves of conventional crude oil in Alberta to be 1.8 billion barrels, representing about one-third of Canada's remaining conventional reserves. This is a year-over-year increase from 2012 of five per cent, resulting from all reserve adjustments less production in 2013.

Alberta's production of conventional crude oil totalled 213 million barrels in 2013, an increase of five per cent.

The province is also the largest contributor to Canadian oil and equivalent production and is the only contributor of upgraded and non-upgraded bitumen, which are the marketed components of raw bitumen production.

Alberta is Canada's largest producer of marketable natural gas. In 2013, Alberta produced 69 per cent of Canada's total production, down from 70 per cent in 2012. Over the same period, Canada's second-largest contributor, B.C., increased its share from 25 per cent to 26 per cent.

Canada is the third-largest natural gas producer in the world, with the majority of the country's gas being produced in Alberta. According to provincial figures, at the end of 2012, remaining established reserves of conventional natural gas stood at 33 tcf, while remaining established coalbed methane gas reserves stood at 2.4 tcf. The province estimates the remaining ultimate potential of marketable conventional natural gas at 74 tcf.

Although conventional natural gas remains a very important part of Alberta's natural gas supply, horizontal drilling and multistage fracturing now allow for development of natural gas from a new source—unconventional natural gas resources. ■

NOTE: This publication contains information about Alberta's oil and gas industry, excluding the oil sands. For information on the oil sands, please refer to the *Alberta Oil Sands Industry Quarterly Update* on this website.

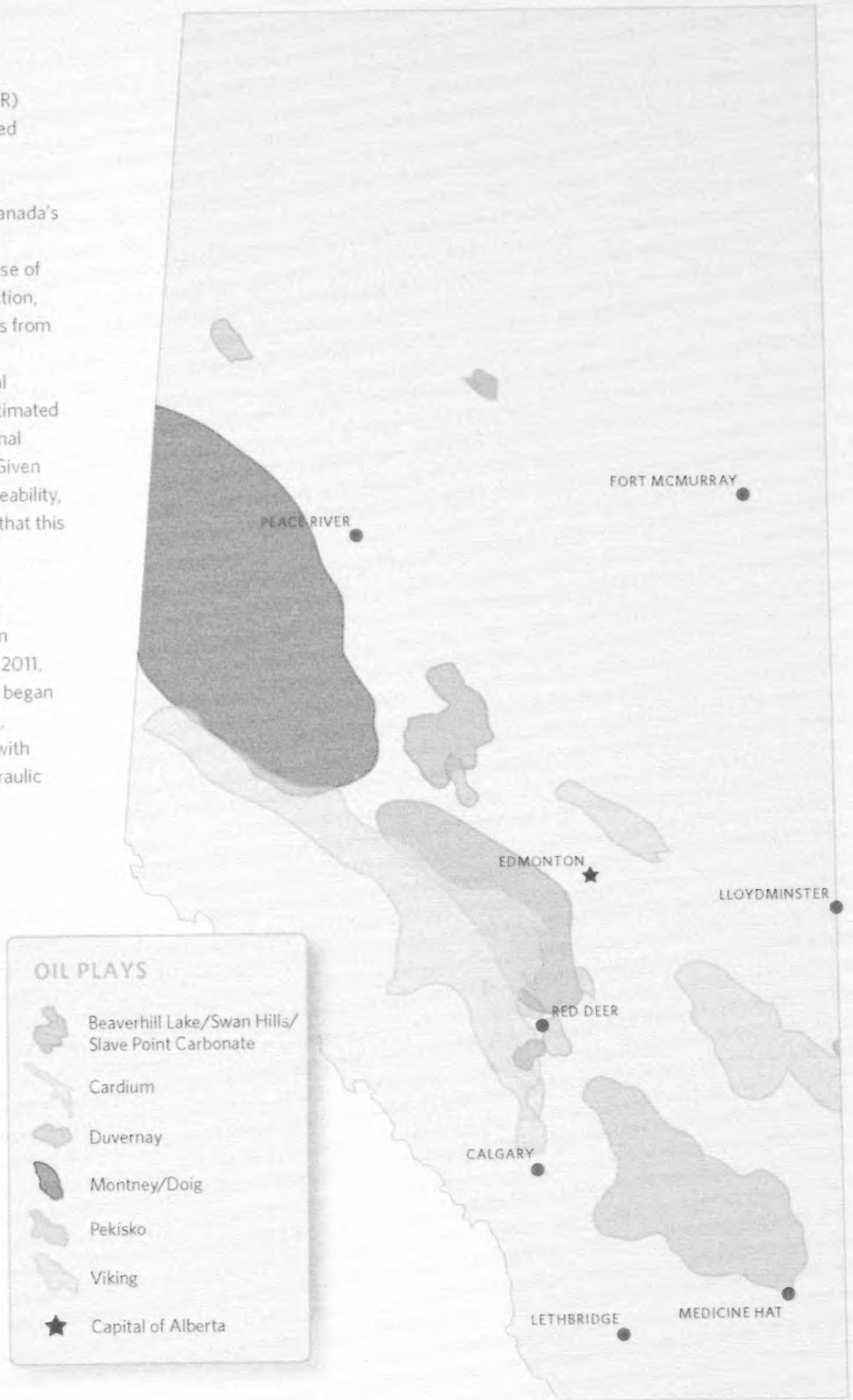
OIL PLAYS

The Alberta Energy Regulator (AER) estimates the remaining established reserves of conventional crude oil in Alberta to be 1.7 billion barrels, representing about one-third of Canada's remaining conventional reserves.

This is a year-over-year increase of 9.5 per cent, resulting from production, reserves adjustments and additions from drilling that occurred during 2011.

In 1994, based on the geological prospects at that time, the AER estimated the ultimate potential of conventional crude oil to be 19.7 billion barrels. Given recent reserve growth in low permeability, or tight oil plays, the AER believes that this estimate may be low.

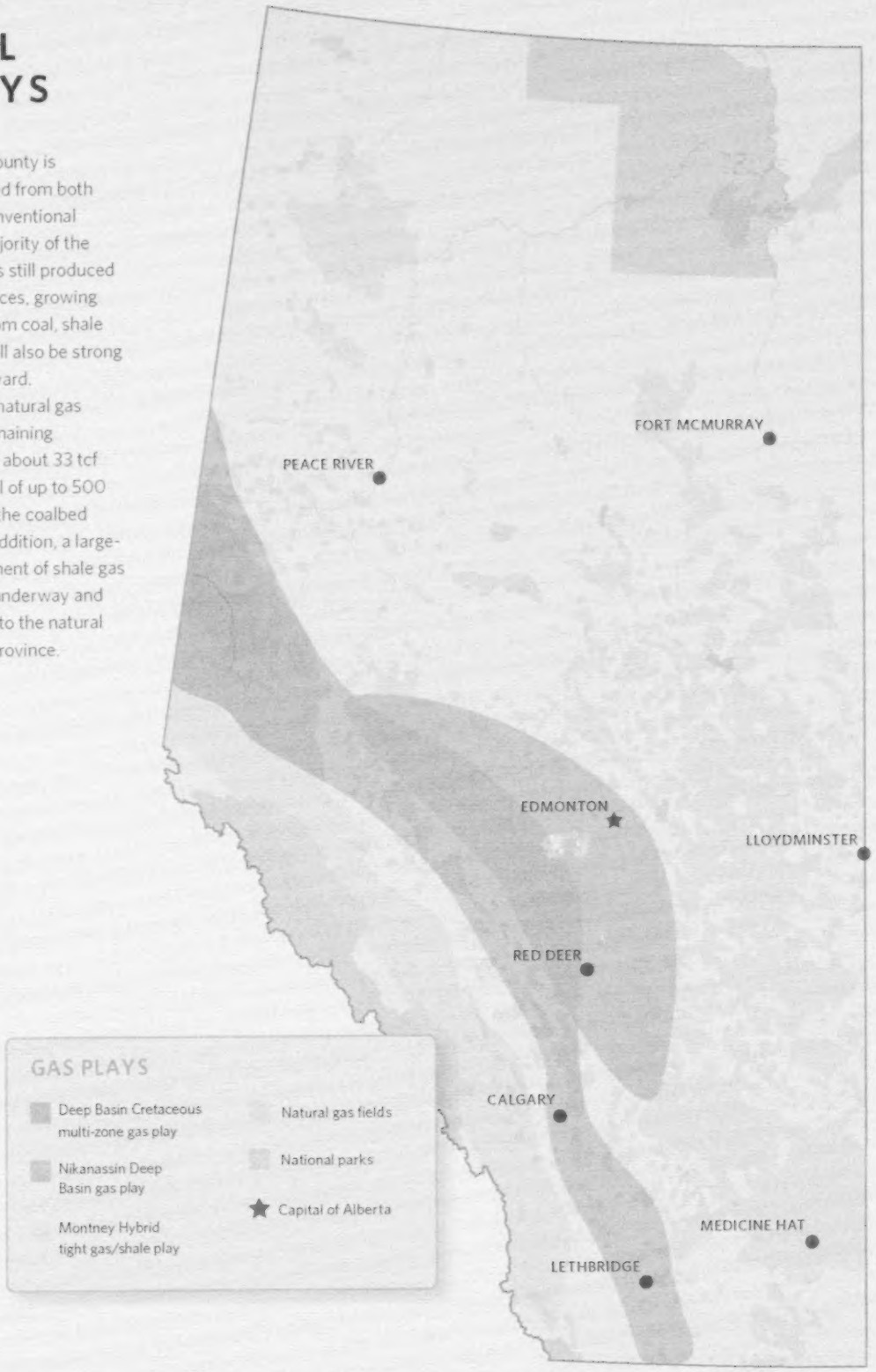
Starting in 2010, total crude oil production in Alberta reversed the downward trend that was the norm since the early 1970s. In 2010 and 2011, light-medium crude oil production began to increase as a result of increased, mainly horizontal, drilling activity with the introduction of multistage hydraulic fracturing technology.



NATURAL GAS PLAYS

Alberta's natural gas bounty is plentiful and is produced from both conventional and unconventional reserves. While the majority of the province's natural gas is still produced from conventional sources, growing natural gas volumes from coal, shale and tight formations will also be strong contributors going forward.

Alberta has a large natural gas resource base, with remaining established reserves of about 33 tcf and estimated potential of up to 500 tcf of natural gas from the coalbed methane resource. In addition, a large-scale resource assessment of shale gas potential in Alberta is underway and could significantly add to the natural gas prospects for the province.



GOVERNMENT UPDATE

Alberta Government

ALBERTANS CAN ACCESS MORE OIL AND GAS INDUSTRY REGULATORY INFORMATION

Albertans now have online access to more information on how the Alberta Energy Regulator (AER) regulates oil and gas development and enforces its requirements.

The AER has launched the Compliance Dashboard, which replaces the incident reporting tool and monthly action summary. It includes information on incidents, including those reported through the incident reporting tool since its launch in June 2013; investigations, including those transferred from Alberta Environment and Sustainable Resource Development, and any investigation closed as of July 2014; and compliance activities and enforcement actions, which go back to July 2014.

The AER conducts thousands of compliance activities each year. The dashboard highlights the non-compliances that have the potential to affect public safety, the environment and resource conservation.

The information has always been available through the Freedom of Information and Protection of Privacy Act process, Jim Ellis, AER president and chief executive officer, said in a news release. "But we wanted it online — easy to access, easy to read, easy to search. It's a spotlight, not just on industry but on the AER, as well."

"The Alberta Energy Regulator continues to make improvements in providing timely information to Albertans about how we work to ensure our rules and requirements are followed," he said.

NEB APPROVES NEW ALBERTA PIPELINE PROJECT

The National Energy Board issued a report in early March recommending approval for NOVA Gas Transmission (NGTL) to construct and operate the Wolverine River Lateral Loop (Carmon Creek Section) project.

The proposed project, approximately 35 kilometres northeast of Peace River, Alta., involves the construction and operation of a 61-kilometre pipeline, 20 inches in diameter, to transport sweet natural gas. Approximately 57 kilometres of the pipeline would be built alongside existing linear disturbances.

ALBERTA STRENGTHENS ENVIRONMENTAL PROTECTION IN ATHABASCA REGION

As part of ongoing efforts to reduce the environmental impact of oil sands development, Alberta has introduced new steps to reduce tailings ponds and regulate the use of water from the Athabasca River.

The tailings management framework focuses on getting tailings ponds remediated faster and slowing tailings ponds growth. Tailings are currently managed through the Alberta Energy Regulator's Directive 074, which does not set timelines for the remediation of existing ponds.

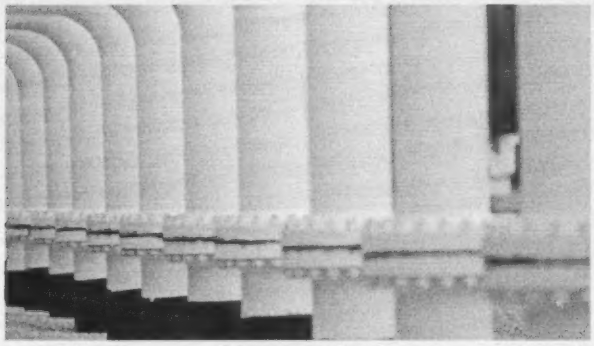
The surface water quantity management framework establishes stringent water use requirements for both current and future minable oil sands operators. At present, this industry uses one per cent of water from the river annually.

"Alberta's oil sands region is already one of the most protected and regulated energy development areas in the world. To enhance this level of protection, we need systems that continue to drive innovation. Industry must continually improve its management of wastes like tailings and respect the full range of water management opportunities that exist in the region," said Kyle Fawcett, minister of environment and sustainable resource development.

Highlights of the tailings management framework include:

- limiting the amount of tailings that can be accumulated;
- pushing companies to invest in technology to remain within those constraints;
- establishing firm thresholds to identify when companies must take action to prevent harm to the environment;
- requiring companies to post additional financial security to deal with potential remediation issues through the Conservation and Reclamation Regulation; and ➤

GOVERNMENT UPDATE CONTINUED



- ensuring tailings are progressively treated and reclaimed throughout the project life cycle and are ready to reclaim within 10 years of the end-of-mine life of that project.

Highlights of the surface water quantity management framework include:

- requiring the majority of water used by existing operators and all water used by new operators to stop during low-flow periods;
- restricting water use during these low-flow periods to a minimum for older operators who are technologically unable to stop all withdrawals;
- establishing weekly triggers, which act as an early warning point before a limit is reached, and setting water withdrawal limits for all minable oil sands operators, using best-available science; and
- maintaining an adequate quantity of water for aboriginal river navigation and pursuit of traditional activities.

PREMIER COMMENTS ON OBAMA'S DECISION TO VETO KEYSTONE XL LEGISLATION

Alberta Premier Jim Prentice issued the following statement after U.S. President Barack Obama vetoed legislation that would have approved the Keystone XL Pipeline:

"I am disappointed but not surprised that President Obama chose to veto bipartisan legislation that would have approved the Keystone XL Pipeline.

"While today's decision was expected, it does not change the fact that Keystone XL would advance North American energy security and prosperity while offering the U.S. access to responsibly developed energy from a close ally and friend.

"Our commitment to responsible energy development is steadfast, and our environmental standards are much greater than those of other countries that send their oil to the U.S. market every day. Alberta is the only major supplier of oil to the U.S. with a price on carbon.

"Canadian and American producers have long adjusted their plans and have been successful delivering additional barrels to the U.S. market through other pipelines and rail options. As a result, our crude exports to the U.S. are forecast to increase this year.

"The debate will continue and, just as I did during my recent visit to Washington, I will continue to communicate Alberta's record as a safe, secure and reliable energy supplier, and our strong support for Keystone XL and for all infrastructure projects that advance North America's energy interests."

ALBERTA, NORTHWEST TERRITORIES ANNOUNCE BILATERAL WATER MANAGEMENT AGREEMENT

Alberta and the Northwest Territories have signed an agreement to protect the integrity of water flowing downstream from Alberta to the Northwest Territories.

The Alberta-Northwest Territories bilateral water management agreement commits both governments to cooperatively manage water resources. The agreement focuses on aquatic ecosystems in the Mackenzie River Basin, the longest and largest river system in Canada.

"Water is a vital resource that knows no boundaries. We are committed to ensuring Albertans and our neighbours in the Northwest Territories have access to a healthy and sustainable water supply, now and in the future," Alberta Premier Jim Prentice says.

The agreement will help ensure water management plans take an adaptive management approach that determines what actions should be taken and when based on scientific monitoring. It will also respect the jurisdiction of governments and ensure water is collaboratively managed for the benefit of the environment, people and the economy.

"Sustaining and protecting the environment is a critical part of our government's balanced approach to creating jobs and economic opportunities through responsible development. We welcome Alberta's partnership and shared commitment to a healthy environment supporting healthy, prosperous people," says Bob McLeod, premier of the Northwest Territories.

"We all share the responsibility of ensuring that our water supply remains healthy, secure and sustainable. Alberta and the Northwest Territories are committed to working together to ensure that our shared water resources are protected." ■

WHAT'S NEW IN THE OIL & GAS INDUSTRY

SERVICE COMPANIES GRAPPLE WITH DOWNTURN

Service companies are now faced with not only less work and customers asking them to reduce their prices but the challenge of retaining the skilled labour they have paid premiums to hire and keep, a recent conference heard.

Service providers are considering wage rollbacks, unpaid days off throughout their organizations—including for management—and a federal work-share program. "They are really trying not to lay off their workers," said Elizabeth Aquin, senior vice-president of the Petroleum Services Association of Canada.

Unlike producers who have cash flow from operations, service companies only make money when they work, so it's difficult for them to ride out the bad times, Aquin told the Canadian Energy Research Institute's annual natural gas conference.

How prepared service companies are to survive the downturn in industry activity depends on how long they have existed and therefore their experience with recessions, their level of debt, the strength of their balance sheets and if they have international operations, she said.

It helps if their customers are still drilling and completing wells, she added.

"That makes a difference, too, [whether service companies' clients] are on the drilling, completions or optimizations side because producers are still producing," said Aquin. "They need the cash flow to service their debts, and some of them have hedged their production as well, so exactly when that ends depends, but as you know, production isn't falling yet but on the drilling side, of course, activity levels are reduced."

Producers are looking for ways to cut costs and are asking service companies for pricing reductions, she said.

"A lot of service companies will say that they have not really raised their prices much since the last recession in 2009, and so to contemplate cuts of 20, 30, 40 per cent just cuts to the bone, and that's just not sustainable," she said. "Everybody has to make a profit or [they're] not going to be around very long, so how do they do that?"

HOW RESILIENT IS TIGHT OIL?

The top executive at the world's biggest publicly traded oil and gas company offered no comfort March 4 to anyone hoping North American tight oil production will fall, allowing global oil prices to rise.

Rex Tillerson, chair and chief executive officer of ExxonMobil, was asked for his views on the shape and duration of an oil price recovery.

Speaking at his company's annual analyst meeting in New York, Tillerson said current oil prices simply reflect supply/demand fundamentals. "It's no more complicated than that."

He said demand has been lacklustre over the last two or three years due to factors such as poor economic performance in Europe and flat consumption in the U.S. China had been buttressing demand, but then its pace of growth slowed.

And as demand softened, North American production rose by a million barrels a day, then another million barrels a day, hurtling "like a freight train into this demand picture," Tillerson said.

"The geopolitical events of the world were keeping some supplies interrupted. And so I think that's what supported things for a long time until last year when the market began to realize what was happening. And I think that's when the correction occurred," he said. "So it's simply supply outstripping demand."

CANADA AND ALBERTA COULD PLAY LARGER ROLE IN PROVIDING LNG TO ASIAN MARKETS, CONFERENCE HEARS

China's energy demand is voracious, and even if growth is slowing, many questions remain outstanding as to how the East Asian economic giant will satisfy its mammoth demand as well as what role North America—and Alberta—could ultimately play in the country's energy mix.

Michael Laffin, partner and chairman, Asia region, at Blake, Cassels & Graydon, told a Canadian Energy Research Institute natural gas conference in early March that the Chinese are certainly showing their interest in Canadian energy opportunities through the directions of their state-owned enterprises (SOEs).

"Calgary is the only city in the world outside of Beijing where China's main three SOE oil and gas companies have a meaningful presence, which is quite remarkable," he said, adding that at present natural gas makes up roughly four per cent of China's primary energy consumption, although the country envisions that percentage to increase to eight per cent by next year as part of the government's current five-year plan.

"One must remember that a one per cent increase in China's gas consumption equals 25 million cubic metres of gas per year. Where will that gas be sourced? Internally, there is great hope ➤

WHAT'S NEW IN THE OIL & GAS INDUSTRY CONTINUED

for shale gas in China, and China's ministry of lands and resources estimates China has 25 trillion cubic metres of potentially recoverable shale-gas resources."

Impacting Canada's ability to satisfy the remaining LNG demand in China, noted Heather Kincaide, program manager of energy and the environment at the Asia Pacific Foundation of Canada, is the access China has to Russian natural gas through pipelines, which was recently fortified with last year's signing of a $400-billion gas deal between the neighbouring countries.

"The biggest issue is price—can we get it there at a price they want to buy it at? Obviously, if you have more pipeline gas availability, it increases your price competition."

WASTE HEAT FROM EDMONTON-AREA INDUSTRIAL SITES HAS POTENTIAL TO SUPPLY HEAT AND POWER

A new study of Edmonton-region industrial areas shows that a significant amount of waste heat exists in industry sites that could theoretically be used to heat and power thousands of homes and reduce CO_2-equivalent emissions.

"The results of the study indicate a positive value proposition for further industry and government engagement in implementation actions that reduce GHG [greenhouse gas] emissions, improve competitiveness, enhance efficiency and contribute to economic diversification," Jeff Reading, CMC Research Institutes representative and project lead, said in a statement.

The first of its kind in Canada, the *Community Integrated Energy Mapping Feasibility Study* obtained information from 16 companies (17 industrial sites) in the Strathcona and Industrial Heartland areas near Edmonton.

"Given that little was known about the regional energy flows in Alberta's major industrial areas, the main goal of this project was to capture site-level information on energy demand [type of energy, fuel source, quality and quantity], along with waste energy availability [exhaust gases, hot water, steam, etc.] to try and identify potential regional opportunities for energy integration, particularly with regard to waste heat," the study states.

"As regional industrial energy mapping had not been undertaken before in Canada, the project was designed so that the methods, tools and frameworks developed could be applied to other industrial areas within Canada."

The energy mapping concept is the first step in understanding the business case for energy integration solutions for Alberta, says Alberta Innovates - Technology Futures environment and carbon management researcher Craig Aumann, a lead author of the study.

"We're now ready to facilitate the next steps based on study results and recommendations, which will involve addressing the identified critical technological and social barriers to energy integration."

The Heartland Region, northeast of Edmonton, was selected for the study because of its unique combination of industry and municipalities, the significant amounts of GHG produced in the region and the support of the Alberta Industrial Heartland Association.

The Heartland Region includes five municipal districts (while the Strathcona Industrial Area is situated between Edmonton and Sherwood Park) and is home to approximately 40 companies across a variety of sectors primarily producing and processing oil, gas and petrochemicals, as well as advanced manufacturing. Over the past several decades, these areas have grown into Canada's largest hydrocarbon processing region.

M&A ACTIVITY COULD BE ON THE UPSWING AS 2015 UNFOLDS

Although it negatively affected merger and acquisition (M&A) activity in the Alberta oilpatch in the latter part of 2014, continued low oil prices could present more deal-making opportunities as this year unfolds, says a new study.

The report, called the *Canadian Oil & Gas 2015 Outlook*, which was conducted by Torys in partnership with Mergermarket, surveys 100 senior corporate executives and investment bankers with recent Canadian oil and gas experience to gain their insight and predictions for the sector.

The survey, conducted in two parts in October and December 2014, reveals that the majority of the respondents—78 per cent—believe an M&A rebound is in the cards over the next 12 months as industry players have had time to flesh out and adapt to the realities of current market conditions.

"The downward spiral in oil prices hindered M&A activity toward the latter part of 2014. However, macroeconomic factors will not necessarily remain as a detriment to the completion of M&A transactions in the Canadian energy sector as buyers and sellers will have assessed the continued volatility in oil prices," says Scott Cochlan, partner, Torys.

"We expect to see strong interest from both private equity firms and international investors."

Derek Flaman, partner, Torys, says there is currently significant demand on the part of well-capitalized investors, particularly private equity funds, for acquisition of quality western Canadian petroleum assets.

"However, it is likely that the onset of major M&A activity will not occur until late in the second quarter given that many potential vendors are not currently willing to conclusively accept the new commodity pricing environment," he says.

"Over the course of the next few months, it is expected that the bid-ask spread should narrow with the result that the second half of 2015 should see significant M&A activity in the oilpatch." ■

TECHNOLOGY UPDATE

TECHNOLOGY KEY, SAYS CRESCENT POINT CEO

Despite the downturn in oil prices, Crescent Point Energy's chief executive officer Scott Saxberg says the company is committed to testing and implementing new technology to drive cost reductions and increase recoveries.

He says the company is continuously adding to its technical knowledge base and has had recent success experimenting with varying amounts and types of fracture stimulation fluid in the Flat Lake play as well as a new closable sliding sleeve completion technique in the Viewfield Bakken and Shaunavon resource plays.

"Advances in technology, such as the closable sliding sleeve in combination with the waterflood, have the potential to generate significant value for shareholders, with increased recovery factors and capital savings when applied across our large drilling inventory," Saxberg says.

PARTNERSHIP TO AID VISUAL MONITORING

Calgary-based Osprey Informatics and Chicago-based Convergint Technologies are partnering to bring the oil and gas industry innovative visual monitoring solutions designed for infrastructure security and operational efficiency.

"As a leading integrator of open source and open protocol solutions, we seek partnerships with best-in-class solution providers such as Osprey," says Brian Haw, director of national sales at Convergint. "We have a strong team of technicians that have expertise with installations in the extreme conditions found in oil and gas operations."

Power and communications infrastructure challenges were once a barrier to the installation and use of video-based monitoring solutions in the oilfield. However, the Osprey Reach platform has been successfully deployed under the most challenging conditions, the companies say. It's extremely bandwidth-efficient, and as a cloud solution it scales easily and does not impact the corporate network.

The companies say Osprey Reach also features a combination of powerful analytics and computer vision that can be easily managed to reduce false alerts. Communications are streamlined by providing customized incident reports. Producers are using this visual data to confirm the operating status of assets and personnel to ensure regulatory requirements and safety compliance.

All video and images are available via the cloud and readily accessible from any smart device at any time. "Industry will now have the same access to technology and security features that they have become accustomed to in their daily lives," says Haw.

"We are thrilled to announce this partnership and look forward to working with the great team at Convergint," adds Michael von Hauff, chief executive officer of Osprey. "In addition to our strong strategic fit, Osprey and Convergint share a common focus: solving critical business problems for customers."

MILLENNIUM ANNOUNCES SUCCESSFUL PATENT AWARDS

Millennium Stimulation Services announces that it has been successfully awarded three patents by the Canadian Intellectual Property office for the use of Energized Natural Gas (ENG) to perform well fracturing operations.

The company says it continues to pursue these and other patent filings in over 30 jurisdictions in the world under the Patent Cooperation Treaty.

Millennium is also developing additional patents for its innovative technologies,

ENG is a well completion technology that blends natural gas with frac fluids and frac sands into an oil and gas wellbore to fracture a producing formation. Millennium says it has developed a streamlined and efficient method of pumping LNG in energized or foam frac applications.

Energized fracturing has long been known to create above average oil and gas reserves recovery, Millennium says. It adds, "This is especially true when there is lower flow capacity or potential flow restrictions created from a multiphase flow regime in the formation.

"The ENG process brings these significant advantages into play without the hazards of handling propane and other heavier-than-air natural gas liquids. The Millennium team continues to stress a high level of commitment to its health, safety and environmental responsibilities to all of its stakeholders." ■

LABOUR UPDATE

PETROLEUM HUMAN RESOURCES COUNCIL OF CANADA: LABOUR IMPACTS OF PRICE DROP WILL BE SHORT TERM

The Petroleum Human Resources Council of Canada (PHR) says that, while the impacts of the current low oil price will be felt most strongly in the western provinces, 550,000 Canadians who are directly or indirectly employed by the industry across the country will undoubtedly begin to feel the effects of reduced commodity prices to varying degrees.

"We are viewing the impacts of the direct and indirect oil and gas workforce as short term," says Carol Howes, new director of PHR in the first of four instalments of the group's *Petro Prices to Petro People* report. PHR says this outlook is also congruent with a Canadian Imperial Bank of Commerce prediction that Canada's oil industry will see a "mild and temporary" recession this year.

"Yes, there will be a slowdown on industry expansion activity and hiring, but this might actually provide temporary relief from labour and skill shortages challenging the industry in the long term," says Howes. She suggests that companies will focus more on core activities in their business to continue with current production.

Howes adds, "This means they will need to maintain their current workforce."

However, PHR notes that layoffs are occurring, especially with contract/contingent, temporary or project-based workers, as more long-term projects are deferred or cancelled.

ABORIGINAL CONSTRUCTION PROGRAM BUILDS OPPORTUNITIES

A two-year pilot program co-sponsored by the Alberta government, Bow Valley College, NorQuest College, industry and aboriginal organizations will help more than 600 aboriginal people train for careers in the construction industry.

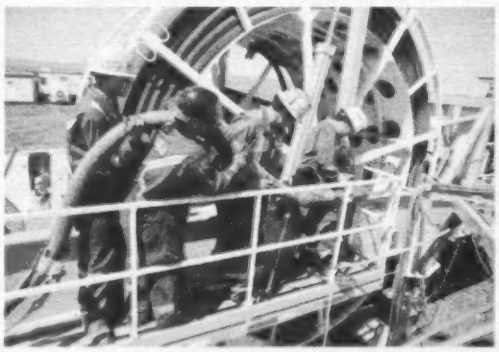
The Alberta Aboriginal Construction Career Centres pilot will complement other existing programs that support aboriginal training and employment in trades careers.

Bow Valley College in Calgary and NorQuest College in Edmonton will each host a new Alberta Aboriginal Construction Career Centre program on their main campuses. Under the program, the two centres will deliver employment training, job coaching and counselling to more than 300 aboriginal people at each institution, with a focus on construction trades. Over its two-year duration, the program aims to provide construction-related job placements for up to 300 registrants.

"This program is the result of our partners identifying and acting on an opportunity that will have an impact on generations to come," says Alberta Premier Jim Prentice. "In an industry that is critical to the growth of our province, these career centres are opening doors of opportunity for aboriginal people and answering the industry's need for skilled workers."

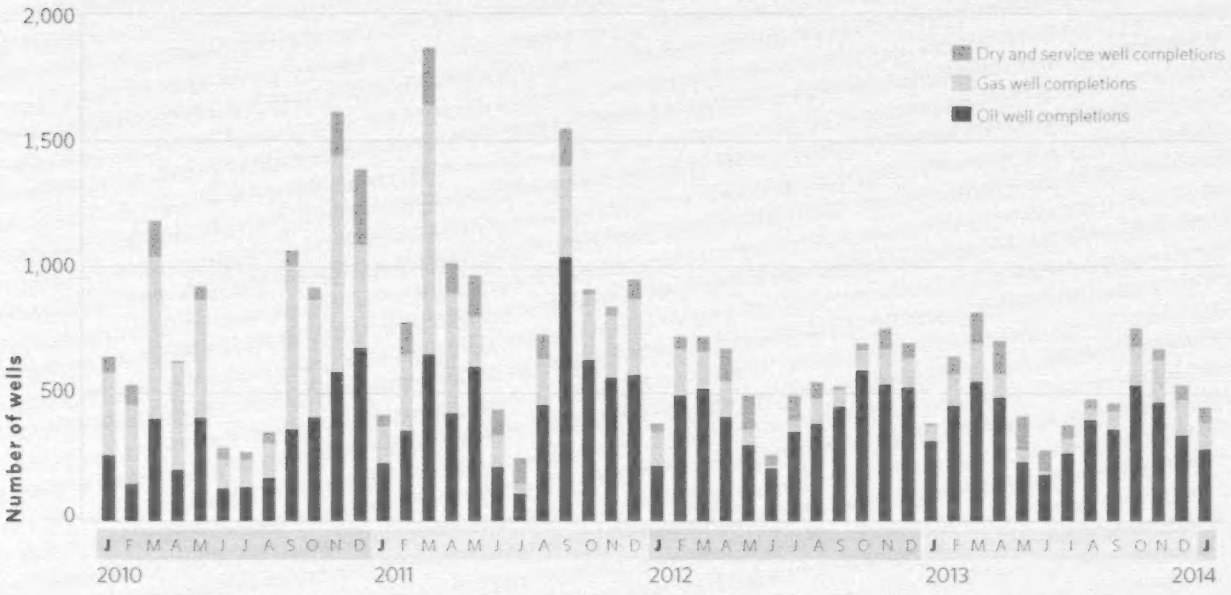
Jodi L. Abbott, president and chief executive officer of NorQuest College, says, "Bow Valley and NorQuest colleges are committed to a respectful and collaborative partnership with urban and rural aboriginal communities. The purpose of the program is to contribute to existing community resources that are targeting successful employment outcomes in the construction industry."

The Alberta government is contributing $1 million to the project, with an additional $525,000 from the two colleges and $750,000 from industry and aboriginal stakeholders. ■



OIL & GAS STATISTICS

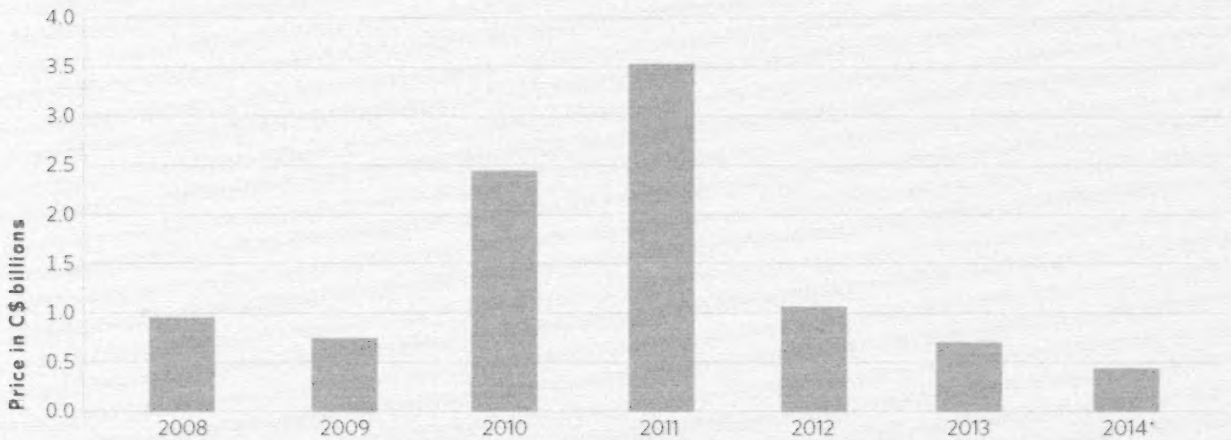
ALBERTA WELL COMPLETIONS


2,000
1,500
1,000
500
0
Number of wells
Dry and service well completions
Gas well completions
Oil well completions
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J
2010
2011
2012
2013
2014

Source: IHS Markit, Nickle's Energy Group

ALBERTA CROWN LAND SALES

Petroleum and natural gas rights, excluding oil sands



*1H14 (3 months)

Source: Alberta Energy Regulator

STATISTICS CONTINUED

DRILLING RIG COUNT BY PROVINCE/TERRITORY

March 17, 2015

	ACTIVE	DOWN	TOTAL	ACTIVE
Western Canada				(Per cent of total)
Alberta	92	439	531	17
Saskatchewan	12	117	129	9
British Columbia	47	33	80	59
Manitoba	0	18	18	0
WC total	**151**	**607**	**758**	**20**
Eastern Canada				(Per cent of total)
Quebec	0	1	1	0
Canada total	**151**	**608**	**759**	**20**

Source: JuneWarren-Nickle's Energy Group

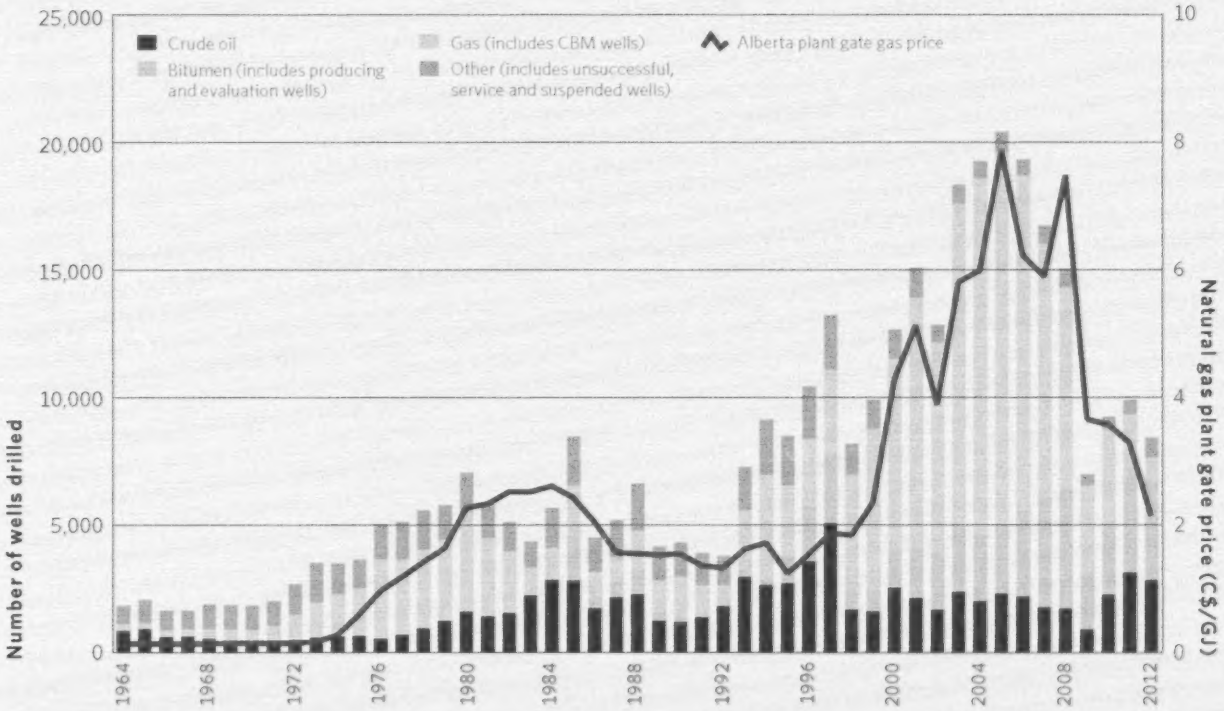
OIL AND GAS WELL COMPLETIONS BY PROVINCE

February 2015

	OIL WELLS		GAS WELLS	
Western Canada	**FEB '14**	**FEB '15**	**FEB '14**	**FEB '15**
Alberta	426	194	119	134
British Columbia	2	1	44	16
Manitoba	49	43	0	0
Saskatchewan	400	239	0	0
Total	**877**	**477**	**163**	**150**

Source: JuneWarren-Nickle's Energy Group

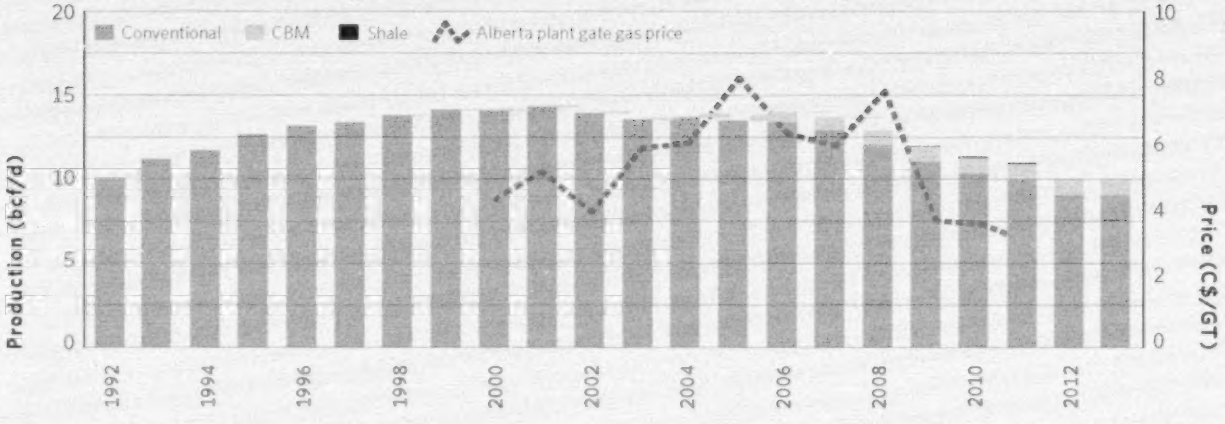
DRILLING ACTIVITY IN ALBERTA, 1964-2012



Source: Alberta Energy Regulator

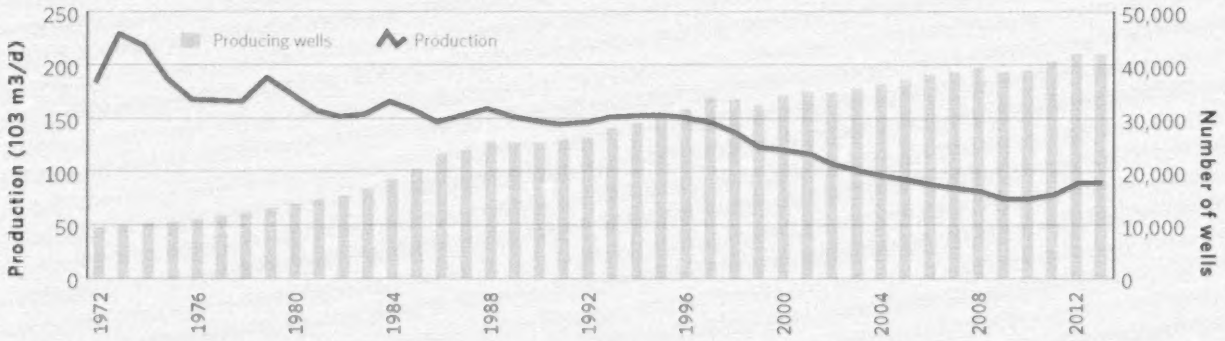
STATISTICS CONTINUED

ALBERTA MARKETABLE GAS PRODUCTION



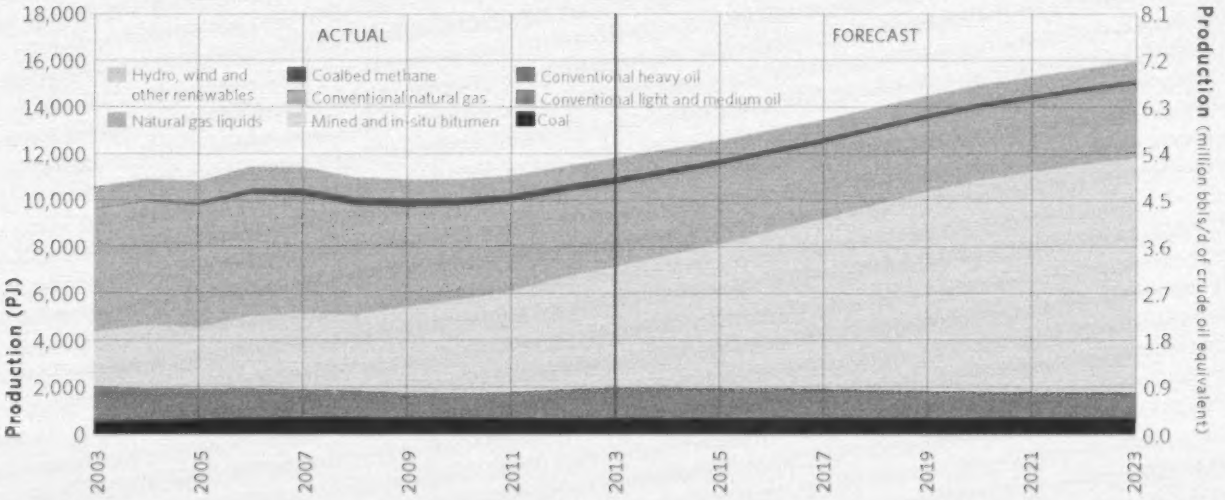
Source: Alberta Energy Regulator

ALBERTA CRUDE OIL PRODUCTION AND PRODUCING WELLS



Source: Alberta Energy Regulator

TOTAL PRIMARY ENERGY PRODUCTION IN ALBERTA



Source: Alberta Energy Regulator

THE DUVERNAY: A RISING STAR?

In December 2009, the Alberta government's final land sale of the year generated an eye-widening $384.3 million—a bright spot in what had been, to that point, a pedestrian year for provincial Crown auctions.

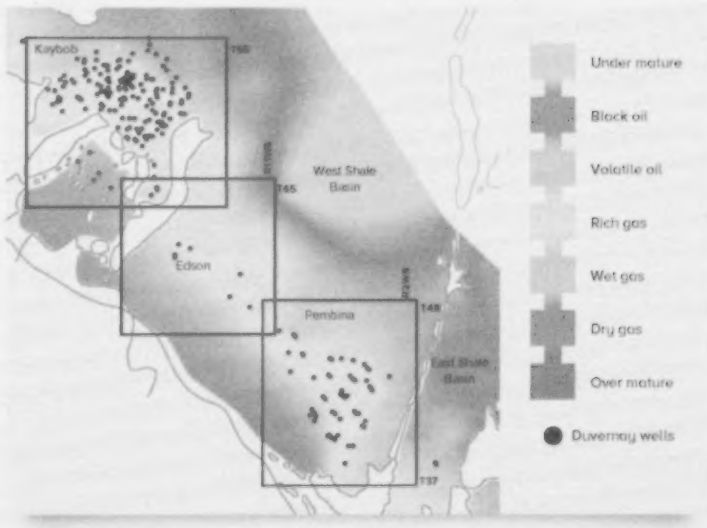
The Duvernay play in Alberta's Deep Basin was identified as a chief reason for the high bonus bids paid at this sale, and this was merely the opening act—it kicked off an over-two-year boom in Crown land spending. The apex came on June 1, 2011, when Alberta attracted a massive $843.03 million—an all-time high for a single sale—fuelled by the Duvernay.

With most of the prospective land spoken for, the question now is, Will the Duvernay fulfill its promise as the next star play of North America, or were those billions in land-acquisition dollars spent in vain?

According to a November 2013 study by BMO Capital Markets, drilling results over the last 1.5 years have confirmed the existence of multi-phase windows—dry gas, liquids-rich gas, volatile oil and black oil—and the ability of the reservoir to behave as a true, over-pressured shale reservoir and, from most windows, deliver hydrocarbons economically.

The Alberta government's royalty regime favours Duvernay gas wells over Duvernay oil wells, which suggests activity, at least in the near term, will be relegated to defining and drilling in the condensate- and natural gas liquids-rich windows, the study notes.

"It is with this continued investment that the Duvernay shale has emerged as a highly sought-after, world-class unconventional shale play, with a focus now on condensate—the new gold," BMO stated.



DUVERNAY FAIRWAY TODAY

EARLY WELL RESULTS

Canadian Discovery identified 59 wells that report production from the Duvernay in Alberta, with 50 of these wells still on stream at Aug. 31, 2013.

The well with the highest oil rate is at that time was a Royal Dutch Shell well in the Kaybob Field at 15-09-063-20W5, which averaged about 200 bbls/d of oil during that month. The best condensate rate was from an Encana well at 06-09-063-23W5 in the Waskahigan Field, which averaged 480 bbls/d. And the best gas rate came from a Chevron Canada well at Kaybob South 02-16-062-20W5, which averaged about 2.5 mmcf/d in August.

It's still too early to declare the play a commercial success, Canadian Discovery admitted, as operators are currently experiencing a range of successes.

"However, indications are that after operators determine the areas with the greatest potential and which completion programs work effectively in those areas, the project costs will come down significantly enough to provide long-term strong economics," the firm said.

FUTURE DEVELOPMENT

Brad Hayes, president of Petrel Robertson Consulting, said that while 2014 was an important year for the Duvernay, he did not characterize it as a pivotal one. Companies will continue to optimize their drilling and completions practices, and some, such as Chevron and Encana, will ramp up development in areas they see as economic.

"The play will progress, but it's unlikely there will be any pivotal events that will suddenly change the course of overall development—we're a few years into it, and there are many more to go," he said. "Duvernay lands in the areas where commerciality is reasonably envisioned—around the liquids-rich part of the fairway—are quite tightly held.

"There are some land opportunities in areas of uncertain economic merit—in the dry gas or oil areas—but there is unlikely to be much more land activity in these areas until their productive and commercial merits are proven up."

BMO said the type well economics show that liquids-rich Duvernay gas wells are profitable and that the condensate has the greatest impact on value. This has led to operators pushing the play boundaries further into the oily phase window in their quest for higher condensate yields. ■

A SNAPSHOT OF SOME OF THE MAJOR PLAYERS IN THE DUVERNAY

For more on the Duvernay, see the *Daily Oil Bulletin*'s special digital magazine of the play.

TRILOGY ADVANCES DUVERNAY BUT WILL SPEND LESS THIS YEAR

Trilogy Energy's Duvernay production has grown to approximately 4,500 boe/d at the end of 2014. Based on the success of the Duvernay drilling to date, Trilogy will continue to monitor advances in drilling and completion techniques to maximize recovery, reduce costs and increase the rate of return.

However, given the current commodity price forecast for 2015, Trilogy will reduce its spending on Duvernay operations to only those projects necessary to maintain its land position and participate in third-party operated activity.

Trilogy has been active in the Duvernay shale play for approximately four years. Since its initial involvement in the play, Trilogy has participated in the drilling of approximately 42 Duvernay wells in the Kaybob area.

The company spent approximately $150 million (net) to drill, complete and/or tie-in wells and certain related infrastructure improvements targeting the Duvernay in 2014 and plans to spend approximately $55 million net in 2015 to drill, complete and tie-in up to 15 (3.5 net) wells.

Trilogy has accumulated approximately 200 net sections of prospective land in the play and will be managing the land base as the play develops. Of these 200 net sections, Trilogy estimates that approximately 125 are in the volatile oil window and 75 are in the gas condensate window of the play.

As the company continues to develop its Duvernay shale assets, it will consider external sources of funding to advance the play.

Results from the play have been encouraging to date, the company states. As industry drills more wells, it continues to evaluate various drilling, completion and production technologies and establish best practices for lowering capital costs, maximizing recoveries and generating better economic returns from the Duvernay.

DUVERNAY DEBUT

Encana expects to have 27 wells on four pads come on production from the emerging Duvernay shale play by about mid-year 2015.

Encana initially planned to drill three Duvernay well pads in 2014. It did four, but the completion operations were delayed. Completions were initially hampered by an inadequate supply of frac water, but that has been resolved and fracturing operations have been underway for several weeks, Mike McAllister, Encana's chief operating officer, said in a conference call.

YOHO'S DUVERNAY DRILLING RESULTS PROMISING

Yoho Resources' production during the fiscal first quarter of 2015 averaged 1,479 boe/d (33 per cent oil and natural gas liquids).

One Duvernay well (0.33 net) was brought on stream in January 2015 after the end of this reporting period. Equipping and tie-in of two (one net) additional Duvernay wells are currently underway; initial production from these wells was expected in March 2015.

CHEVRON UPDATES DUVERNAY ACTIVITY

Chevron Corporation had tied in 12 wells in its Duvernay drilling program in Alberta as of early 2015.

In a year-end filing with the U.S. Securities and Exchange Commission, the company noted that it holds approximately 228,000 net acres in the Duvernay shale in Alberta and approximately 200,000 overlying acres in the Montney tight rock formation.

Chevron has a 70 per cent owned and operated interest in most of the Duvernay acreage after completing a 30 per cent farm-down in 2014.

Production from the initial multi-well program in the Duvernay continued during 2014, and drilling activities began on an expanded 16-well appraisal program. A total of 12 wells had been tied in to production facilities by early 2015. ■

CONTACTS

INDUSTRY ASSOCIATIONS

Alberta Land Surveyors' Association www.alsa.ab.ca
Canadian Association of Geophysical Contractors www.cagc.ca
Canadian Association of Oilwell Drilling Contractors www.caodc.ca
Canadian Association of Petroleum Producers www.capp.ca
Canadian Energy Pipeline Association www.cepa.com
Canadian Gas Association www.cga.ca
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